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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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AUG 26 2003
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In the Matter of)	
)	
Amendment of Parts 1, 21, 73, 74 and 101 of)	WT Docket No. 03-66
the Commission's Rules to Facilitate the)	RM-10586
Provision of Fixed and Mobile Broadband)	
Access, Educational and Other Advanced)	
Services in the 2150-2162 and 2500-2690)	
MHz Bands)	
)	WT Docket No. 03-67
Part 1 of the Commission's Rules - Further)	
Competitive Bidding Procedures)	
)	MM Docket No. 97-217
Amendment of Parts 21 and 74 to Enable)	
Multipoint Distribution Service and the)	
Instructional Television Fixed Service)	
Amendment of Parts 21 and 74 to Engage in)	
Fixed Two-Way Transmissions)	
)	WT Docket No. 02-68
Amendment of Parts 21 and 74)	RM-9718
of the Commission's Rules With Regard to)	
Licensing in the Multipoint)	
Distribution Service and in the)	
Instructional Television Fixed Service for the)	
Gulf of Mexico)	

**Comment on Notice of Proposed Rules Making
MDS/ITFS Spectrum
A Rural Licensee/Operator Response**

Grand Wireless Company, Inc. – Michigan¹ (Grand) is a licensee/operator of MMDS spectrum (spectrum it acquired through the auction process) providing broadband data services in contiguous BTAs located in the rural northwest quadrant of the lower Michigan Peninsula.

In reviewing the Commission's NPRM, Grand concludes that the interest of the *rural* public, a segment of the country's population whose telecom needs is often more difficult and more expensive to meet, differs from its urban brethren and therefore requires somewhat different considerations from the Commission in its rules making process.

¹ Grand Wireless Company, Inc. – Michigan has entered into an agreement to sell its three Michigan BTAs to Cherry Tree Communications LLC whose principle member has been a major participant in the development of the Michigan BTA broadband operations.

Table of Contents-Summary

- A. **The Coalition Proposal for Spectrum Realignment with an Alternative Plan.** The proposed default band plan, replaced by a similar but slightly different default band plan, would provide most licensees with an equal opportunity for maximizing technical applications. *The Coalition proposed default band plan does provide equal opportunity.* It is assumed that the Commission will allow licensees, if all licensees in the BTA agree to do so, to customize the band plan within their BTA or geographical service area.
- B. **High Power/Low Power.** The development of rural operations employs three distinct uses of spectrum. The first and most obvious is the use of super cell(s) to obtain commercially viable economic scales. The second use of spectrum is to build mini-cells fed by the super cells where population pockets exist that are better served by such means. The third use of spectrum is to link together super cells in building a wide area wireless rural network thus avoiding the often onerous costs in rural areas of leasing broadband wireline connectivity to the Internet.
- C. **Geographic Areas for Licenses.** The Basic Trading Area (BTA) appears to reasonably allocate geographical service areas that define the needs of urban and rural service areas. Expanding the service areas for incumbent MMDS and ITFS licensees to conform to the BTA system of geographical allocation appear, at first, to be a reasonable approach; yet, it intrudes upon the rights of successful MMDS BTA bidders who obtained rights through the auction process to provide service within those BTA borders which are outside the incumbent's Protected Service Area.
- D. **Unlicensed Use of Unassigned ITFS Spectrum.** In many rural areas ITFS spectrum has been unused, not because it isn't needed by educational groups to insure broadband capability within their educational mantra but because there has been no filing window for new ITFS stations in many years
- E. **Geographic Area Licensing for Current Licensees.** This proposal by the Commission would serve the needs of the rural operator whose service area is often large and its anticipation of return on investment by expanding into certain parts of its BTA is often marginal. Engineering and legal costs themselves may hinder deployment into small pockets of rural populations.
- F. **Transition to New Band Plan.** It can be assumed that significant numbers of channels have not been built and that no financial capital investment has been made in any facility other than application filings, petitions, reconsiderations, etc. Licensees of these channels who have not built should not be able to be a recipient of compensation but should be automatically assigned to the new band plan effective with the Commission's deadline or an earlier settlement date negotiated by a Proponent. The deadline for any negotiating should be no later than nine (9) months from the date of the Commission's rules making and the deadline for implementation should be no later than 15 months from that date.
- G. **Spectrum Access to Cable and DSL Providers.** Grand's broadband operations in rural areas of Northern Michigan would likely be impacted negatively should spectrum be opened to cable and, to a lesser extent, DSL operators. Since Wireless represents a potential competitive force, cable and DSL with their substantial financial power may see their own wireless presence as a means to protect their existing business and, because of the thinness of the rural market, as a means of cutting the fledgling rural operator off at the knees.

- H. **Competition.** Most would say that competition is good for the consumer. Grand would say that it is the right kind of competition that benefits the consumer. However, to subject the wireless rural operator to a third competitor (one within its own spectrum) would be devastating to its economic viability.
- I. **Signal Strength Limits at Geographic Service Area Boundaries, Power and Antenna Height Limits.** Limitations placed upon the power and antenna height of a base station fail to consider the almost endless variety of circumstances that a particular service may require. Signal strength at boundaries would provide the best universal protection to surrounding stations.
- J. **Unlicensed "Underlay" Operation.** The use of unlicensed operations in the 2500 to 2690 MHz band presents a number of problems.
- K. **2150-2162 MHz Band.** The 10-12 MHz of the 2150-2160/62 allocation is quickly filled up using digital modulation when used as the upstream of a broadband wireless service in our rural service areas
- L. **Fees Issues** Regulatory fees are particularly onerous for the rural operator. On a per population basis they are multiple times that of urban licensees. A sliding fee based upon population density would more fairly distribute these fees.
- M. **Discontinuance, Reduction or Impairment of Service.** The transition to advanced wireless services whose offerings are still in their infancy will result in a staggered usage of spectrum over time particularly in rural areas.
- N. **Performance Standards.** The development of a rural broadband system particularly over a large geographical area is, for the most part, a work in progress. It is not possible, other than in generalizations, to determine the backbone needs, upload and download needs, and mini-cell deployments that would allow an operator to engineer and license each and every channel before it is needed. Rural operators, in particular, need flexibility in bringing channels into service.
- O. **License Renewal.** There should be a distinction between licensee/operators serving the public and those who are not.
- P. **Build Out Requirements.** Build out requirements should not be spectrum sensitive but population sensitive. As a rural operator expands their service, additional channels come into use and more population is within its service capability. Two years to reach 30%, four years to reach 50%, six years to reach 70%, and eight years to reach 80% signal coverage of the population might be a good rural yardstick
- Q. **An Auction of Currently Unassigned ITFS Spectrum.** In rural areas, it would be beneficial to see only educational institutions and other restricted entities have access to available ITFS spectrum and only then if they are restricted for 5 years from leasing their excess capacity to a commercial entity with the exception of an incumbent licensee/operator. This will eliminate most of the gold rush mentality that might harm the small rural operator already in early deployment of broadband or other advanced services and protect legitimate ITFS eligible entities in obtaining needed spectrum.
- R. **Two-Sided Auctions to Restructure Spectrum.** There are many markets where the incumbent licensees have not been able to aggregate sufficient spectrum or the "right combination of spectrum" from other incumbent licensees, a situation that does not serve the public interest. A two-sided auction of incumbent licensees should finally bring some order to this problem and expedite service to the public. The auction of willing incumbent licensees, ITFS, MDS, BTA, BTA Partitioned and Disaggregated, should be open to all entities with the exception of Cable and telephone companies. The Commission could simultaneously hold an auction for unlicensed ITFS spectrum but limit participation to currently eligible entities.

A. The Coalition Proposal for Spectrum Realignment with an Alternative Plan

Coalition Band Plan

Channel Designation	Lower Frequency	Upper Frequency		
A1	2500.0000	2505.5000	LOW POWER	Channels can be used for TDD or Upstream FDD
A2	2505.5000	2511.0000		
A3	2511.0000	2516.5000		
B1	2516.5000	2522.0000		
B2	2522.0000	2527.5000		
B3	2527.5000	2533.0000		
C1	2533.0000	2538.5000		
C2	2538.5000	2544.0000		
C3	2544.0000	2549.5000		
D1	2549.5000	2555.0000		
D2	2555.0000	2560.5000		
D3	2560.5000	2566.0000		
J	2566.0000	2572.0000		Guard Band
A4	2572.0000	2578.0000	HIGH POWER	Channels can be used for high-power operations like existing ITFS TV.
B4	2578.0000	2584.0000		
C4	2584.0000	2590.0000		
D4	2590.0000	2596.0000		
E4	2596.0000	2602.0000		
F4	2602.0000	2608.0000		
G4	2608.0000	2614.0000		
K	2614.0000	2620.0000		Guard Band
E1	2620.0000	2625.5000	LOW POWER	Channels can be used for TDD or Downstream FDD
E2	2625.5000	2631.0000		
E3	2631.0000	2636.5000		
F1	2636.5000	2642.0000		
F2	2642.0000	2647.5000		
F3	2647.5000	2653.0000		
H1	2653.0000	2658.5000		
H2	2658.5000	2664.0000		
H3	2664.0000	2669.5000		
G1	2669.5000	2675.0000		
G2	2675.0000	2680.5000		
G3	2680.5000	2686.0000		
I	2686.0000	2690.0000		

The Coalition's proposal for realignment of the MMDS/ITFS spectrum into Low Power-High Power-Low Power segments is the most suitable of the various proposals for rural operations. However, the distribution of channel assignments does not fairly give the majority of licensees an opportunity for full implementation/participation in a variety of technologies. Designating upstream and downstream channels for FDD would establish nationwide uniformity with its attendant benefits; however, to establish formal channel pairings might place some limitation upon an operator who does not have use of one of the pairs.

This can be true of the H-Group of channels which can often have three different licensees who each could have different agendas. The remaining MMDS and ITFS channel groups contain four channels each under one licensee. The revised band plan makes it possible for a 4 channel group to have 1 channel in the LBS, 1 channel in the MBS, and 1 channel in the UBS with 1 additional channel placed where needed. Each licensee, MDS and ITFS, then has the greatest degree of flexibility. Grand believes this revised plan should be the default plan selected by the Commission. A national consistency in identification of channels (A1 should be A1 everywhere) is needed yet licensees should be allowed to cooperate among themselves to decide where their channels will be located. For example, a licensee might decide with everyone's cooperation that their E1 and E2 channels will now be the A2 and B1 as shown on the default band plan. Thus the greatest degree of flexibility in potential channel transition is achieved especially where an operator's access to a great number of channels is limited. Grand proposes a default band plan as follows.

Revised Default Band Plan

Channel Designation	Lower Frequency	Upper Frequency		
A1	2500.0000	2505.5000	LOW POWER	Channels can be used for TDD or Upstream FDD
A2	2505.5000	2511.0000		
B1	2511.0000	2516.5000		
C1	2516.5000	2522.0000		
C2	2522.0000	2527.5000		
D1	2527.5000	2533.0000		
E1	2533.0000	2538.5000		
E2	2538.5000	2544.0000		
F1	2544.0000	2549.5000		
G1	2549.5000	2555.0000		
G2	2555.0000	2560.5000		
H1	2560.5000	2566.0000		
J	2566.0000	2572.0000	Guard Band	
A4	2572.0000	2578.0000	HIGH POWER	Channels can be used for high-power operations like existing ITFS TV
B4	2578.0000	2584.0000		
C4	2584.0000	2590.0000		
D4	2590.0000	2596.0000		
E4	2596.0000	2602.0000		
F4	2602.0000	2608.0000		
G4	2608.0000	2614.0000		
H2	2614.0000	2620.0000		
K	2620.0000	2625.5000	LOW POWER	Channels can be used for TDD or Downstream FDD
A3	2625.5000	2631.0000		
B2	2631.0000	2636.5000		
B3	2636.5000	2642.0000		
C3	2642.0000	2647.5000		
D2	2647.5000	2653.0000		
D3	2653.0000	2658.5000		
E3	2658.5000	2664.0000		
F2	2664.0000	2669.5000		
F3	2669.5000	2675.0000		
G3	2675.0000	2680.5000		
H3	2680.5000	2686.0000		
I	2686.0000	2690.0000		

Conversion of the entire 2500-2690 MHz band to low-power operations would not serve the rural community. Grand's deployment of two-way broadband services in rural Michigan uses high-power super-cell downstream transmissions with low-power upstream transmissions to serve sparsely populated areas. There is no economical alternative. Where there are pockets of population within its service area that do not "see" signal because of line-of-site issues, the use of repeaters to create low-power mini-cells or the use of developing non-line of site technology should be found effective in providing service.

While Grand is using TDD technology in its super cell, the proposed band plan allows for maximum flexibility in the selection of a variety of technologies that allows the operator to deploy any number of systems to meet the public needs.

The other band plan proposals limit this flexibility

It is assumed that the Commission will allow licensees, if all licensees in the BTA agree to do so, to customize the band plan within their BTA or geographical service area. For example, Grand wishes to use what is the A1 and A2 channels which are unlicensed in either proposed band plan in exchange for its E1 and E2 channels or wishes to exchange the same channels with an ITFS licensee who also agrees to the changes. Notification would need to be made to the Commission of such changes so licenses, construction permits, and pending applications would clearly represent channel responsibility. For national uniformity A1, for example, would always be A1 but with a newly assigned licensee

B. High Power / Low Power

The development of rural operations employs three distinct uses of spectrum. The first and most obvious is the use of super cell(s) to obtain commercially viable economic scales. The second use of spectrum is to build mini-cells fed by the super cells where population pockets exist that are better served by such means. The third use of spectrum is to link together super cells in building a wide area wireless rural network thus avoiding the often onerous costs in rural areas of leasing broadband wireline connectivity to the Internet. While this use incorporates the use of point-to-point technology, high power is generally needed to achieve reliability over long path links particularly if the path is partly over water.

Grand operates such a 57 mile link between its Traverse City and Petoskey Michigan hubs. It is anticipated that this point-to-point spectrum can be reused in certain areas of the BTA(s) as low power mini-cells where needed.

Grand has been in contact with an adjacent BTA authorization holder who is also building a broadband wireless network to discuss the interconnection by wireless links of each operator's network creating a larger wireless network that can provide greater value to its customers. These interconnections will, in most case, require "high" power point-to-point transmissions whose signal strength will exceed the normal boundary signal limits. Adjacent service area licensees should be able to enter into agreements to permit signal levels across mutual boundaries in excess of the Commission's rules.

C. Geographic Areas for Licenses

Nationwide and regional licensing focuses the economic resources of the licensee/operator on the Tier 1 and 2 population centers because that is where the easy money is. Rural areas will tend to be the last to be built or developed by large operations not only because of more marginal economic factors but because the large licensee/operator doesn't have a clear understanding and intimate knowledge of the needs of the rural area. Perhaps this is why it is the small operator who often has ventured into opening up rural operations (along with the lower cost of spectrum acquisition).

Any applicant who wishes to specifically and successfully operate in a rural area must have a keen understanding of that market, must achieve penetration rates greater than his urban counterpart, and must minimize the larger overhead that typically characterizes large operations.

The Basic Trading Area (BTA) appears to reasonably allocate geographical service areas that define the needs of urban and rural service areas. Expanding the service areas for incumbent MMDS and ITFS licensees to conform to the BTA system of geographical allocation appears at first to be a reasonable approach, yet, it intrudes upon the rights of successful MMDS BTA bidders who obtained rights through the auction process. The BTA authorization gives certain rights to spectrum use within its BTA that lies outside of any 35 mile protected area of an incumbent licensee. While there are often interference issues in such cases, there are also BTAs of sufficient size or terrain that would permit the BTA authorization holder to build a station(s). So to simply expand an incumbent's service area would diminish the value, to some extent, for which the BTA authorization holder had bid. Additionally, the incumbent may be unwilling or unable to serve this expanded area.

In many cases, the protected service area of an incumbent licensee overlaps into surrounding BTAs in minor geographical and economic ways that never-the-less create potentially difficult licensing concerns for the adjacent BTA authorization holder. Should the Commission decide to expand the incumbent licensee's service area to include the BTA for which it is mostly located, then, the Commission should eliminate those incursions into adjacent BTAs confining the incumbent to the primary BTA and the associated signal limits imposed upon the BTA authorization holder or new signal and interference limits proposed by the Commission.

Similarly, to open up ITFS to new applicants where little to no use of ITFS currently exists could possibly intrude upon a BTA authorization holder's right to apply for commercial ITFS spectrum. While this is not a factor in the top fifty markets, this "unused" spectrum is often available in rural markets. A BTA authorization holder can apply for "commercial" ITFS spectrum as long as 8 ITFS channels remain available for educational applicants.

This raises the issue of competition. Does the Commission envision the MMDS/ITFS spectrum to compete against cable and DSL or to also compete against itself? That is, in rural areas where there is "currently" unused spectrum, would the FCC encourage multiple operators who would tend to compete against each other (much to their economic detriment) rather than provide competitive pressure on cable and DSL?

Both the FCC and the Congress focus on bringing broadband services to rural areas. There is no doubt that this can be successfully done in competition with cable and DSL but it is still economically marginal. Introducing another operator early on in the development of the technology with essentially the same product would be devastating to both entities.

While Grand sees no problem with educational applicants for new ITFS authorizations, it would ask the Commission to limit the commercial use or lease of these new licensees for a period of time, perhaps five years, to allow the incumbent operator time to develop the difficult rural marketplace. Certain benchmarks could be established to insure that the incumbent operator is fulfilling its mandate to provide real service within its rural BTA. Failure to meet these benchmarks could allow new operators to petition the Commission to enter service earlier.

D. Unlicensed Use of Unassigned ITFS Spectrum

There seems to be a feeling that the Commission sees "unused/unlicensed" ITFS spectrum to mean "unwanted" spectrum by the licensed community and as such might be better served if made available for unlicensed use. In rural areas, where the development of wireless system is in its infancy, the acceptance and growth of wireless broadband will gradually demand more and more spectrum especially where spectrum is also used to develop wireless backbones. Grand, in its projected development of its services in rural Michigan, sees the need to apply for commercial ITFS spectrum in its more mature phase of operations.

In many rural areas ITFS spectrum has been unused, not because it is not needed by educational groups to insure broadband capability within their educational mantra but because the educational community is unaware and/or unsure of the application of wireless to their future needs and because there has been no filing window for new ITFS stations in many years. Potentially large amounts of bandwidth will be needed within the self-contained networks of school systems. It is expected that such networks would also interconnect with commercial MMDS operations.

In Grand's Petoskey BTA operation, an incumbent ITFS operator has interconnected its network with Grand's network to provide broadband accessibility to a consortium of school districts. This wireless network replaced a slow and yet expensive wireline connectivity to the Internet. It is expected that as educational applications are developed, more and more bandwidth will be needed to meet these educational needs.

One school was somewhat reluctant to replace their wireline connectivity with the wireless service and decided to run half their computers on each system. The students quickly learned which computers performed better and actually rushed to class trying to insure they had the faster system. The following year only the wireless system was used.

Another school was established to deal with students who had significant academic deficiencies. Computer learning was a key component of this school's approach to these students along with broadband access. The result was a remarkable improvement in the academic achievement of these students.

Rather than assign spectrum to unlicensed use and later have to find other spectrum or clear the unlicensed use at some point in time, it would seem prudent to allow time for educational entities to realize the value of their own broadband networks not just for connectivity to the Internet but connectivity between school facilities and between school districts. Larger and larger throughput will be required and, although commercial operators may provide Internet connectivity, the educational institutions themselves may find it economical to develop their own spectrum held networks. In many cases the commercial entity will help facilitate this development.

E. Geographic Area Licensing for Current Licensees

Under current rules a BTA authorization holder must also apply for an individual station license for each transmitter within its BTA. In other services utilizing geographic area licensing, however, a geographic area licensee may generally construct a new transmitter within its licensed area and on a channel covered by its geographic area license so long as (1) the construction complies with the Commission's interference and other rules, (2) an environmental assessment is not required, (3) international coordination is not required, or (4) the proposed transmitter would not affect a radio frequency quiet zone

This proposal by the Commission would serve the needs of the rural operator whose service area is often large and its anticipation of return on investment by expanding into certain parts of its BTA is often marginal. The engineering and legal costs themselves may hinder deployment into small pockets of rural populations.

The engineering and legal cost of new filings as part of the proposed transition process would be eliminated in most cases thus removing a portion of the financial pain associated with the transition.

F. Transition to New Band Plan

1. The Coalition proposes that we rely on a combination of regulatory and market forces to effect the transition to its proposed band plan. The Coalition recommends a market-by-market transition process to the new band plan that allows MDS and ITFS licensees to continue to operate pursuant to the current rules until an MDS or ITFS licensee or lessee (called a "Proponent") triggers the transition process. In general, the Coalition would require the Proponent to fund any conversion costs incurred by ITFS operators but would require MDS operators to pay their own conversion costs. In addition, any party offering a commercial service using MDS or ITFS channels would be required to reimburse the Proponent for its *pro rata* share of the cost of transitioning the facilities that it uses and the cost of transitioning facilities associated with any overlapping transition impact area. A Proponent would be permitted, at its sole discretion and at any time, to trigger the transition process with respect to any MDS or ITFS licensee that has a GSA located in whole or in part within 150 miles of any portion of its GSA. At any time during the transition planning period, the Proponent would be permitted, in its sole discretion, to decide not to proceed with the transition process in whole or in part. The Coalition plan would require the Commission to enact detailed rules concerning the mechanisms of the transition process and set forth nine safe harbors describing proposals that licensees subject to transition would have to accept from proponents. The Coalition does not recommend that we set any fixed deadlines.

What is the rationale for requiring the "Proponent" to pay for the conversion costs of any ITFS operator but not for an MDS operator? Imagine a commercially leased ITFS facility or a single channel MDS operator deciding it wants to affect a transition process forcing MDS operators to make an expense they would not have ordinarily wanted to make. Imagine again the "Proponent" changing its mind in mid-stream!

It is almost ludicrous to expect a commercial operator who did not want to make or need to make a transition be forced to do so by a Proponent and then be further forced to pay that Proponent's cost of transition. What a can of worms this would be!

Yet, there needs to be some orderly process that can work on a national basis with a given deadline that will put the transition in place with a minimum of disruption physically and financially on all parties. For the most part what we are talking about is cooperation between the licensees. There have been, over the years, certain licensees who hold significant national coverage who have used the FCC's rules of interference for economic leverage. For many legitimate operators this has been a disheartening situation. Real interference issues were essentially non-existent or of such little consequence that obstructionism was clearly the intent. Throw in stations that claimed to have been built but were not or one petition after another of little merit and the whole process of serving the public became bogged down. The Coalition's no time limit Proponent oriented methodology seems just another trip down this same destructive path while assuming that "safe harbors" will somehow provide an answer.

One of the Commission's proposed alternatives would allow incumbents to bargain freely for the best inducements they can obtain from Proponents to convert their operations prior to a deadline for conformance with the new default band plan, while requiring incumbents to fund their own conversions if they do not accept a Proponent's offer to fund the conversion ahead of time. Under such an approach, the incumbent's bargaining leverage would be greater the further in the future the conversion deadline lay and it would gradually diminish as the deadline approached.

It is believed that this proposal, with certain parameters, offers the best methodology in accomplishing the Commission's objectives.

1) Eligibility for Active Participation in Transition.

It is realistic to assume that in the majority of BTAs, mainly rural and semi-rural, there are ITFS channels that have not yet been assigned particularly since there has been no filing window for many years. Also a significant number of commercial MDS channels obtained in the auction

process have not yet been built because the development of broadband (and other uses) is in its infancy (and awaiting this rules-making) and because "wireless cable" never really happened in sufficient numbers. In addition, there are channels and channel groups that have not been built because of "interference issues" real or imagined, channels involving wave after wave of petitions, and channels that have been forfeited for failure to construct after issuance of a construction permit.

We can assume that significant numbers of channels have not been built and no financial capital investment has been made in any facility other than application filings, petitions, reconsiderations, etc. With the Commission's support of geographical licensing, future legal and engineering out-of-pocket will be minimal and thus no hindrance to the transition.

Licensees of these channels who have not built should not be able to be a recipient of compensation but will be automatically assigned to the new default band plan effective with the Commission's deadline or a band plan and earlier settlement date negotiated with a Proponent. A Proponent, which may be an un-built licensee, need only discuss compensation with stations that have been built.

The deadline for "Completion of Construction" filings should be either March 13, 2003 or April 2, 2003 the date of adoption or release of this NPRM. This will prevent speculative "construction" to gain leverage in this transition process. Applications by existing BTA authorization holders who file for and are granted construction permits after either of these dates must be responsible for their own transition costs even if they are not the Proponent.

Any window for new ITFS applications or auctions where there are mutually exclusive filings should only take place after the Commission's deadline for the transition.

The Commission should act on petitions regarding stations who have not built or having done so do not serve the public. These "bogus" stations often exist for the purpose of gaining leverage with interference issues or have been ware-housed.

This removal of un-built channels from compensation will reduce the congestion surrounding this transition.

2). Deadline.

The deadline for any negotiating should be no later than nine (9) months from the date of the Commission's rules making and the deadline for transition should be no later than 6 additional months from that date. This should allow sufficient time for built station licensees to make preparations for the transition. Any settlement between built station licensees could shorten this time period.

To extend this deadline would remove any sense of urgency that all parties need and would allow those more interested in obstruction to delay the public interest.

3) Cost Limitations for the Transition.

With the history of obstructionism sometimes bordering on extortion by certain licensees, the Commission needs to limit the cost that a Proponent needs to pay to a reasonable amount. Some licensees may see this as a last gasp gold rush opportunity whose sole purpose is one of gain rather than co-operation in the transition process.

The cost of transition for a built station is basically confined, on the transmit end, to the antenna, transmitter, and circulators needed to feed the new frequency into the feed-line going to the

antenna. In many instances the antenna is of a broadband type that is universal to any transition. Outside of any need to change the polarity, the antenna in most cases is therefore not a cost factor. Transmitters may be a different matter depending upon their type (analog or digital) and if they are of a variable frequency design. It would be unreasonable for a Proponent to have to pay for a digital transmitter to replace an existing analog transmitter or to replace a variable frequency transmitter that can be retuned to the new channel outside of perhaps new filters. A recipient of equipment could, at their option, pay the difference between the analog and a digital transmitter. In those instances where licensees use different locations to provide service, circulators tuned to the new frequencies would need to be provided. It may also be possible to swap out equipment between licensees further reducing everyone's burden in the transition phase. Certainly a Proponent who provides transition equipment should have the right to the equipment replaced.

In major markets where all the channels are spoken for, it might appear at first that the transition process would be the most difficult. Yet in many of these markets, lease agreements between a commercial operator and ITFS/MDS incumbents encompass most, if not all, of the channels. In such cases no new equipment needs to be bought and each licensee essentially swaps channel(s) with other licensees to conform to the new band plan.

The cost of receiving equipment transition may also be reasonably accomplished. Most antenna/down-converters can receive any channel in this spectrum and should not need replacing.

It is possible that the antenna might need to be rotated if a change in polarization is desired. Likewise most receivers can be tuned to any of the MDS/ITFS channels so the expense is generally limited to labor in the retuning process. This is a general rule but exceptions may occur.

Transceivers are generally not tunable. In most cases these will need to be replaced.

In summary, transition costs should be minimal between co-operating entities.

G) Spectrum Access to Cable and DSL Providers.

Grand's broadband operations in rural areas of Northern Michigan would likely be impacted negatively should spectrum be opened to cable and, to a lesser extent, DSL operators. The cable operator(s) have already made significant penetration into the residential market and to some extent the small business market. Since Wireless represents a potential competitive force, cable and DSL with their substantial financial power may see their own wireless presence as a means to protect their existing business and, because of the thinness of the rural market, as a means of cutting the fledgling rural operator off at the knees.

The cable or DSL provider does not even need a wireless profit motive as long as they can discourage pure wireless competitors from entry into the business or cripple existing wireless operations thus protecting their coaxial or wireline businesses. The history of cable and ILEC DSL providers anti-competitive positions should sufficiently discourage the Commission from opening up spectrum to this type of entity.

H) Competition.

Most would say that competition is good for the consumer. Grand would say that it is the right kind of competition that benefits the consumer. Is it the Commission's intention to see this spectrum as competition against cable and DSL? Does the Commission see this spectrum as an opportunity to compete within itself?

One could consider the argument that in urban areas several wireless operators using this spectrum could exist in competition with each other as well as cable and DSL. With much of the urban spectrum

already spoken for, what will happen will happen. The rural marketplace is another situation. The cost of providing service in the rural marketplace is considerably greater than that of the urban marketplace. There is nothing new in that statement as that has been well known about rural areas from the beginning of the telecommunication's industry. To subject the wireless rural operator to a third competitor (within its own spectrum) would be harmful to its economic viability as well

I). Signal Strength Limits at Geographic Service Area Boundaries, Power and Antenna Height Limits

It would seem that these two subjects are inter-related. Limitations placed upon the power and antenna height of a base station fail to consider the almost endless variety of circumstances that a particular service may present. Terrain, sparseness of population, distance to population centers, need for super-cells, etc. Applying the boundary maximum signal strength allows the operator the flexibility to determine what best works for that particular market place. Rules should also allow operators of adjacent service areas to enter into agreements that would allow boundary signal levels to exceed the established maximum level. In the real world this is generally irrelevant in that a response station's antenna located near a service area boundary will have its highly directive antenna pointed away from the boundary.

Restrictions on antenna height (including surrounding ground elevations) may or may not be a detriment in some fashion to the needs of the operator (and consumer). If a boundary maximum signal strength is applied instead, then the operator will need to determine the effect of potential interference to its own operations within its own service area. It is not in the operator's best interest to have a response station using any more power than necessary.

J) Unlicensed "Underlay" Operation

The use of unlicensed operations in the 2500 to 2690 MHz band presents a number of problems.

First, there can't be any nationwide uniformity since in many parts of the country all the channels are in use. In much of the rest of the country one or more vacant channel groups in one service area may adjoin a service area where that channel group is in use. Only in rural areas would one tend to find, initially, more vacant channels.

Until the Commission opens a window for new ITFS filings it can not judge what occupancy will occur. There may very well be significant pent-up demand by ITFS eligible entities that most spectrum will be applied for to limit any practical national opportunity for unlicensed underlay operations.

There may be anti-competitive motivations, as well, by the rural operator. As asked earlier, does the Commission see the public interest served by Wireless in this spectrum as a competitor with cable and DSL or does the Commission see Wireless in this spectrum competing among itself as well? In rural areas any competition within the spectrum may/will be economically destructive to all parties. Additionally, in rural areas unlicensed may have less need beyond its already available spectrum.

K) 2150-2162 MHz Band

The 10-12 MHz of the 2150-2160/62 allocation is quickly filled up using digital modulation when used as the upstream of a broadband wireless service in our rural service areas. Grand is faced with the oncoming need to use sectorization. Alternating two 5 MHz channels with alternating polarization would seem to be a solution but it is hard to imagine accomplishing this with "substantially less spectrum".

L) Fee Issues

Regulatory fees are particularly onerous for the rural operator. The regulatory fee of multiple channel payments might not seem much in an urban area where many thousand customer payments will easily cover this cost but in rural areas with limited population that cost becomes of greater concern to the operator. The Commission is well aware that broadband in rural areas is a challenge and may find a sliding scale based on population density for the service area in the public interest in encouraging successful rural operations. This could be based upon the BTA density from federal census data.

M) Discontinuance, Reduction or Impairment of Service

Providing service to the public should be the primary consideration that allows for preservation of licenses and spectrum. Different geographical service areas will grow at different rates with additional channels put into service as the operation warrants. In the wireless cable service you either put on all the channels you could or you did not operate. The transition to advanced wireless services whose offerings are still in their infancy will result in a staggered usage of spectrum over time particularly in rural areas.

It should be expected that, as time goes by, additional channels are placed into service as demand grows. The speed with which additional channels are placed into service is highly dependent on the service area with rural areas being slower than urban areas.

N) Performance Standards

The development of a rural broadband system particularly over a large geographical area is, for the most part, a work in progress. It is not possible, other than in generalizations, to determine the backbone needs, upload and download needs, and mini-cell deployments that would allow an operator to engineer and license each and every channel before it's needed. Currently "unused" spectrum does not mean "unneeded" or "unwanted spectrum". Rural operators, in particular, need flexibility in bringing channels into service. Even the use of percentage of population that can receive service may not necessarily demonstrate the real effort that is being made by the operator. Generally an operator will start service in the population center of a geographical service area and, as its product is accepted by the consumers and its financial health permits, will start to expand to areas beyond its original service area. Population served rather than spectrum used is a better measurement of a licensee's effort to serve the public.

O) License Renewal

It is believed that there should exist a distinction between licensee/operators servicing the public and those who are not.

P) Build Out Requirements

One might generally assume in urban geographical service areas that the population density is greatest at the urban center and slowly decreases as one moves away from that center. Transmission from this center of the population will provide signal to a substantial portion of the population.

In the rural environment there is often one small city/town that is considered the population center for purposes of locating the initial transmission site. But, unlike its urban counterpart, the population does not decrease slowly from this center but abruptly stops and then at various distances away in all directions smaller population centers appear. The current yardstick for providing service is much more difficult for the rural operator than the urban operator.

Grand obtained its BTA authorizations through the auction process. Why did it bid on these rural BTAs? Because it was familiar with these rural areas, the people, the terrain, the local economy. Large operators and the financial community do not come running to these areas; otherwise, the concern by the Commission and Congress about rural broadband deployment as well as other telecommunication services would not be an ongoing issue. So three years after the original broadband deployment in one of its three rural but contiguous BTAs, Grand is providing broadband service in two of the BTAs and expects the third BTA to see service within months. Unlike the major companies who hold spectrum, rural operators such as Grand have moved ahead with service offerings, struggled with developing technology, and somehow managed to economically stay afloat to a point where we can now consider expanding through mini-cells or repeater technology into more distant but smaller population centers throughout the BTA.

Build out requirements should not be spectrum sensitive but population sensitive. As the rural operator expands his service, additional channels come into use and more population is within its service capability. The original rules require each channel to be put into service to prevent forfeiture and this made sense when it was envisioned as a video service but not when envisioned as a mobile and data service. Two years to reach 30%, four years to reach 50%, six years to reach 70%, and eight years to reach 80% signal coverage of the population might be a good rural yardstick. Failure of the operator to attain this service coverage would trigger the availability of unused spectrum and/or partitioning of un-served areas to new operators.

Q **An Auction of Currently Unassigned ITFS Spectrum**

In rural areas, it would be beneficial to see only educational institutions and other restricted entities have access to available ITFS spectrum and only then if they are restricted for 5 years from leasing their excess capacity to a commercial entity with the exception of an incumbent licensee/operator. This will eliminate some of the gold rush mentality that might harm the small rural operator already in early deployment of broadband or other advanced services. This restriction can be removed if the incumbent operator fails to provide sufficient service as defined earlier. In most major markets, because of the lack of availability of unlicensed spectrum, the incumbent operator is unlikely to see "competition" to its service offerings although the population could conceivably support economically successful multiple operators. Yet much of the rural market has unlicensed spectrum that, if made available without restrictions, could allow competition that would be harmful to both parties. The Commission must certainly be aware that telecom companies have committed economic suicide in recent years. The opening of competition within this spectrum would lead the rural operators down that very path. Again, does the Commission envision this spectrum to provide competition with cable and DSL or within itself? The rural pie has NEVER been big enough for that.

Until the Commission can determine the need of current ITFS eligible entities, it should not broaden the definition of eligibility. The Commission should limit commercialization by new ITFS authorization holders for a reasonable period of time.

Using the Commission's definitions of "small businesses", Grand's broadband operations could better be described as a "very small tiny entrepreneur" yet it is deploying broadband in rural areas; something multi-billion dollar companies have failed to do even in the economically desirable urban areas.

Grand, a minority owned business itself, is also concerned that the auction process involving "small business" or "minority/women" preferences or discounts has been full of suspect relationships in past auctions. There always seems to be someone out there bending the rules and generally getting away with it.

R. **Two-Sided Auctions to Restructure Spectrum**

There are many markets where the incumbent licensees have not been able to aggregate sufficient spectrum or the "right combination of spectrum" from other incumbent licensees, a situation that does not serve the public interest.

There are other circumstances where a licensee is no longer willing or able to bring service to the public or for valid reasons such as interference has not built or has ware-housed spectrum to gain some financial leverage and is unwilling to turn in their license(s) for cancellation. This should not be confused with licensees who, while capable of building, have not built or have built "bogus" stations or have built a non-public service station hiding behind one or two "bogus customers" as if that satisfies the public interest

A two-sided auction of incumbent licensees should finally bring some order to this problem and speed service to the public. The auction of incumbent licensees, ITFS, MDS, BTA, BTA Partitioned and Disaggregated, should be open to all entities with the exception of Cable and ILECs. The Commission could simultaneously hold an auction for unlicensed ITFS spectrum where there are mutually exclusive applicants but limit participation to currently eligible entities.

This approach will serve the public interest by unraveling years of frustration between licensees (allowing one to proceed and the other to get out) and, at the same time, allowing educational and/or governmental entities to end their years of frustration waiting for an ITFS filing window. The ITFS auction should only take place where there is more than one mutually exclusive applicant. The Commission could assign each eligible applicant to an ITFS channel group if sufficient unlicensed spectrum exists to accommodate each applicant eliminating the need for an auction.

In the filing process, a licensee who has leased use of their spectrum to another must state so and make a copy of that lease part of the filing process. That will allow potential interested parties to determine their level of interest. In those leases where a "Right of First Refusal" exists, the Lessee will have an opportunity to exercise that right based upon its desire to match the high bidder including the licensee's own bidding efforts to achieve its perceived valuations. The Lessor and Lessee could also agree to void the lease should there be a high bid that is acceptable to both parties with the proceeds split between the Lessor and Lessee 75-25%. This agreement would also be part of any filing and the Lessee could also be a bidder in this process.

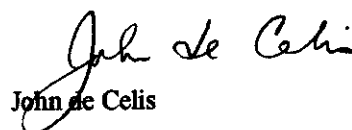
S. Transition, 2-way Auctions, ITFS Auctions Grand recommends that the Commission structure its rules making to allow:

First, Transition with a 9 month negotiating window followed by a 6 month period to reconfigure built stations. During this time the Commission will dismiss those licensees who have fabricated "Completion of Construction" or who have made a mockery of "service to the public",

Second, Two-Way Auctions after the transition to put licensed but unused or unwanted spectrum into the hands of those who value it most, and lastly,

Third, ITFS Auctions between mutually exclusive eligible ITFS applicants.

Respectfully Submitted,


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August 14, 2003

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